

Appl. No. 10/709,735  
Reply to Office action of February 13, 2008

**Amendments to the Claims:**

The listing of claims will replace all prior versions and listings of claims in the application:

5 **Listing of Claims:**

1. (currently amended) An electronic device circuit comprising:

a bus interface for communications with a host;

an interface unit electrically coupled to the bus interface for downloading  
operational firmware from the host and downloading receiving

10 initialization data required for initializing the electronic device from the  
host;

a control circuit electrically coupled to the interface unit for transferring the  
downloaded operational firmware to a volatile memory; and

15 a microprocessor electrically coupled to the control circuit for executing the  
downloaded operational firmware while stored in the volatile memory;  
wherein the microprocessor controls the normal operations of the electronic  
device circuit according to the downloaded operational firmware, and the  
initialization data contains instructions required to initialize the components of  
the electronic device circuit before the microprocessor is able to execute the  
20 operational firmware.

2. (previously presented) The electronic device circuit of claim 1 wherein the bus  
interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

25 3. (previously presented) The electronic device circuit of claim 1 wherein the interface  
unit is a macro.

30 4. (previously presented) The electronic device circuit of claim 3 wherein the macro  
comprises handshaking, data reception, and writing received data into the  
memory functions.

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5-6. (cancelled)

7. (previously presented) The electronic device circuit of claim 1 wherein the host is a  
5 computer system.

8. (previously presented) The electronic device circuit of claim 1 wherein the  
microprocessor executes the downloaded operational firmware without  
accessing a non-volatile memory.

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9. (previously presented) The electronic device circuit of claim 1 wherein the normal  
operations of the electronic device circuit at least include reading data from an  
optical disc.

15 10. (previously presented) The electronic device circuit of claim 1 wherein the volatile  
memory comprises the downloaded operational firmware being executed by the  
microprocessor to control normal operations of the electronic device circuit.

20 11. (currently amended) An electronic device comprising a download mode wherein  
operational firmware is downloaded from an external host and stored into a  
volatile memory of the electronic device and initialization data required for  
initializing the electronic device is ~~downloaded~~ received from the external host,  
followed by a normal mode wherein a microprocessor of the electronic device  
executes the operational firmware stored in the volatile memory to control  
25 normal operations of the electronic device, wherein the initialization data  
contains instructions required to initialize the components of the electronic  
device before the microprocessor is able to execute the operational firmware.

30 12. (previously presented) The electronic device of claim 11 wherein the normal  
operations of the electronic device at least include reading data from an optical

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disc, processing the data, and transferring the processed data to the host.

13. (cancelled)

5 14. (previously presented) The electronic device of claim 11 wherein the operational firmware is downloaded over a bus interface conforming to USB, IDE, SATA, SAS, or SCSI interface standards.

10 15. (previously presented) The electronic device of claim 11 wherein the host is a computer system.

16. (currently amended) A method of operating an electronic device, the electronic device comprising a control circuit connected to a microprocessor, a volatile memory, and a bus interface connected to a host, the method comprising:  
15 downloading operational firmware from the host;  
~~downloading~~ receiving initialization data required for initializing the electronic device from the host, wherein the initialization data contains instructions required to initialize the components of the electronic device before the microprocessor is able to execute the operational firmware;  
20 writing the operational firmware into the volatile memory; and  
the microprocessor executing the operational firmware in the volatile memory to control normal operations of the electronic device.

17. (cancelled)

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18. (original) The method of claim 16 wherein the operational firmware is downloaded over a bus interface conforming to USB, IDE, SATA, SAS, or SCSI interface standards.

30 19. (previously presented) The method of claim 16 further comprising the electronic

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device transmitting an electrical signal to an application program in the host to begin downloading the operational firmware.

20. (original) The method of claim 16 wherein the host is a computer system.

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21. (currently amended) A computer system comprising:

a host computer comprising operational firmware for controlling operations of an electronic device and initialization data required for initializing the electronic device; and

10 the electronic device comprising:

a volatile memory comprising the operational firmware downloaded from the host computer over a connecting bus interface; and

a microprocessor executing the operational firmware in the volatile

memory for controlling normal operations of the electronic device;

15 wherein the electronic device further ~~downloads~~ receives the initialization data from the host computer, and the initialization data contains instructions required to initialize the components of the electronic device before the microprocessor is able to execute the operational firmware.

20 22. (previously presented) The computer system of claim 21 wherein the normal operations of the electronic device at least include controlling the rotational speed of an optical disc in the electronic device and reading data from the optical disc.

25 23. (original) The computer system of claim 21 wherein the bus interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

24. (cancelled)

30 25. (currently amended) An electronic device controller comprising:

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a bus interface for communications with a host;  
a volatile memory for storing operational firmware downloaded from the host;  
a microprocessor for controlling normal operations of the electronic device by  
executing the operational firmware stored in the volatile memory;  
5 an RF circuit; and  
a control circuit connected to the bus interface, the volatile memory, the  
microprocessor, and the RF circuit;  
wherein initialization data required for initializing the electronic device is  
downloaded received from the host, and the initialization data contains  
10 instructions required to initialize the components of the electronic device before  
the microprocessor is able to execute the operational firmware.

26. (previously presented) The electronic device controller of claim 25 wherein the  
volatile memory comprises the downloaded operational firmware being executed  
15 by the microprocessor to control normal operations of the electronic device.

27. (currently amended) An electronic device circuit used in a host system, wherein  
the electronic device circuit has operational firmware downloaded from the host  
system to a volatile memory through a bus interface every time after the host  
20 being powered on, the electronic device circuit comprising:  
a microprocessor for executing the downloaded operational firmware while  
stored in the volatile memory;  
wherein the microprocessor controls the normal operations of the electronic  
device according to the downloaded operational firmware, and initialization  
25 data required for initializing the electronic device circuit is downloaded  
received from the host system, and the initialization data contains instructions  
required to initialize the components of the electronic device circuit before the  
microprocessor is able to execute the operational firmware.

30 28. (previously presented) The electronic device circuit of claim 27 wherein the bus

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interface conforms to USB, IDE, SATA, SAS, or SCSI interface standards.

29. (cancelled)

5 30. (previously presented) The electronic device circuit of claim 27 wherein the host system is a computer system.

10 31. (previously presented) The electronic device circuit of claim 27 wherein the microprocessor executes the downloaded operational firmware without accessing a non-volatile memory.

32. (previously presented) The electronic device circuit of claim 27 wherein the host system comprises the volatile memory.

15 33. (previously presented) The electronic device circuit of claim 27 wherein the host system comprises a host controller accessing the volatile memory that is shared by the host system and the microprocessor during the normal operation.

20 34. (previously presented) The electronic device circuit of claim 27 wherein the volatile memory is accessed only by the electronic device circuit on the normal operation.

25 35. (previously presented) The electronic device circuit of claim 27 wherein the electronic device circuit comprises the volatile memory.

36-37. (cancelled)